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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,711	04/30/2001	Hyun-Cheol Kim	51876P241	4920

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EXAMINER	
AHMED, FAROOQUE	

ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/846,711	KIM ET AL.	
	Examiner	Art Unit	
	Farooque Ahmed	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *30 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/30/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This action is responsive to the application filed 04/30/2001. Claims 1-7 are pending. Claims 1-7 Represent APPARATUS AND METHOD FOR DISPERSTVELY PROCESSING QOS SUPPORTED IP PACKET FORWARDING.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7 are rejected under 35 USC § 102(e) as being anticipated by Zheng et al., U.S. patent no. 6,611,522.

Zheng teaches the invention as claimed includes (See abstract).

In reference to claim 1, Zheng teaches an apparatus for dispersively processing an IP (Internet Protocol) packet forwarding for supporting a quality of service (QoS), said apparatus comprising:

a) An input-processing unit for classifying reception IP packets according to the QOS and storing them at an input-side class queue (See abstract; figs 5,6,9,10; column 4 lines 1-67; column 5 lines 19-67; column 8, lines 30-64; column 11 lines 30-64, Zheng disclosed logical in

put port with line card process classifying data queuing structure for intermediately storing the transferred IP data packets for out put queue according to QOS);

b) An information-searching unit for searching forwarding information base by using an exact matching table and an LPM (Longest Prefix Matching) search table according to an IP header value of the IP packet stored at the input processing unit, and gaining forwarding information (See figs 5,8,9,10,33-34; column 8 lines 4-48; column9 lines1-67; column10 lines 25-64; column 13 lines 13-64; column 14 lines 3-44; column 16 lines 6-49; column 17 lines 30-64; column18 lines 1-67,Zheng disclosed line card process and Traffic control, policing component is logical mechanisms is configured to data forwarding path where lookup mechanism matching the ip route address in table with ip protocol and ip header gain the access in input data stream);

c) A packet-transferring unit for transferring the IP packet according the forwarding information gained through the information searching unit (See figs 5,6,8-11,18, Column12 lines1-67; Column13 lines 31-63; Column18 lines 5-55; Column 19 lines 22-54; Column 21 lines 43-67, Zheng disclosed Transmit (ASIC) forward IP data packet and Receiving (ASIC) gained the data information and forwarding through lookup Engine);

d) An output-processing unit for classifying the IP packets transferred from the packet transferring unit according the QOS, storing them at an output-side class queue, and outputting the stored packet according to the QoS (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column5 lines 18-58; Column 8 lines5-62; Column12 lines1-65; Column13 lines 5-55; Column 14 lines 1-

44; Column 21 lines 43-67 Zheng disclosed out put line card process based on QOS elements where queue structures for storing on out port and ip data packet outputting in for communication);

a. In reference to claim 2, Zheng teaches the apparatus as recited in claim 1, wherein said information-searching unit is characterized in that according to the searching result for the exact matching table, the forwarding information is carried out of the forwarding table by using an output address of the exact matching table, after that, the IP packet is encapsulated and transferred to a next-hop; and See figs 5-30, Column 3 lines 1-35; Column 4 lines 1-5; Column 5 lines 18-67 Column 6 lines 1-24; Column 8 lines 4-18; Column 10 lines 25-44 Column 11 lines 35-67; Column 12 lines 1-67; Column 13 lines 54-67 Column 17 lines 45-67; Column 18 lines 1-15; Column 19 lines 10-67 Column 20 lines 1-67; Column 21 lines 1-67; Column 22 lines 10-67 Column 23 lines 1-67; Column 24 lines 4-15,35-67; Column 26 lines 28-54 Column 28 lines 36-67,Zheng disclosed Police Mechanism & Look up elements with transmit ASCI identify a forwarding path with access the table secludes routing out put IP packet encapsulates in stack that are distained for next hope);

According to the searching result for the LPM matching table, the forwarding information is carried out of the forwarding table by using the output address of the LPM matching table, after that, the IP packet is encapsulated and transferred to the next-hop, and simultaneously, the LPM matching result is registered for the exact matching searching table. (See figs 5-30, Column 3 lines 1-35; Column 4 lines 1-5; Column 5 lines 18-67 Column 6 lines 1-24; Column 8 lines 4-18; Column 10 lines 25-44 Column 11 lines 35-67; Column 12 lines 1-

67; Column 13 lines 54-67 Column 17 lines 45-67; Column 18 lines 1-15; Column 19 lines 10-67 Column 20 lines 1-67; Column 21 lines 1-67; Column 22 lines 10-67 Column 23 lines 1-67; Column 24 lines 4-15,35-67; Column 26 lines 28-54 Column 28 lines 36-67,Zheng disclosed Police Mechanism & Look up elements with transmit ASCI identify a forwarding path with access the table secludes routing out put IP packet encapsulates in stack that are distained for next hop);

In reference to claim 3, Zheng teaches the apparatus as recited in claim 2 wherein said queue stores an IP packet payload, DH (Destination Header) as destination address value of the IP packet, and an EH (Encapsulated Header) encapsulation header information stuck when the IP encapsulated, as the main fields of the IP packet (See Figs 13,15 22,23 Column 3 lines 1-35; Column23 lines 1-5; Column 24 lines 18-67, Zheng disclosed Data is being stored and queue and Ip data is encapsulated where destination address is stack in header where total information length field is hold);

In reference to claim 4, Zheng teaches a method for dispersively processing an IP (Internet Protocol) packet forwarding, in an IP packet forwarding dispersion processing apparatus for supporting a quality of service (QoS), said method comprising the steps of (See abstract; figs 5,9,10; column5 lines19-67; column10 lines 30-64, Zheng disclosed (QOS) with line card process with (ASIC) forwarding ATM and IP data packets);

a) Classifying reception IP packets according to the QOS and storing them at an input-side class queue; (See abstract; figs 5,6,9,10; column 4 lines 1-67; column 5 lines 19-67; column 8 lines 30-64 column11 lines30-64, Zheng disclosed Classifying data queuing structure for intermediately storing the transferred IP data packets for out put queue according to QOS);

b) Searching a forwarding information base by using an exact matching table and an LPM (Longest Prefix Matching) search table according an IP header value the packet stored at the input-side class queue, and gaining forwarding information (See figs 5,8,9,10,33-34; column 8 lines 4-48; column9 lines1-67; column10 lines 25-64 column 13 lines 13-64; column 14 lines 3-44; column 16 lines 6-49; column 17 lines 30-64; column18 lines 1-67 column 23 lines 15-67; column 24 lines 1-67, Zheng disclosed line card process and Traffic control, policing component is logical mechanisms is configured to data forwarding path where IP lookup model mechanism matching the ip route address in table utilized with ip protocol and ip header gain the access in input data stream);

c) Transferring the IP packet according to the gained forwarding information (See figs 5,6,8-11,18, Column12 lines1-67; Column13 lines31-63; Column18 lines 5-55; Column 19 lines 22-54; Column 21 lines 43-67, Zheng disclosed Transmit (ASIC) forward IP data packet and Receiving (ASIC) gained the data information and forwarding through lookup Engine);

d) Classifying the transferred IP packets according to the QoS, and storing them at an output-side class queue; and (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column5 lines 18-58; Column 8 lines5-62; Column12 lines1-65; Column13 lines 5-55; Column 14 lines 1-44; Column 21 lines 43-67, Zheng disclosed classification element and QOS elements applied on transmitting ip packet and queue and stored on output port);

e) Outputting the IP packet stored at the output-side class queue according to the QoS (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column5 lines 18-58; Column 8 lines5-62; Column12 lines1-65; Column13 lines 5-55; Column 14 lines 1-44; Column 21 lines 43-67,

(Zheng disclosed ip data packet outputting and QOS elements where IP data queue and stored on out port);

In reference to claim 5, Zheng teaches a method as recited in claim 4, wherein said step b) includes the steps of:

b1) carrying the forwarding information of the forwarding table by using an output address the exact matching table, according the searching result for the exact matching table, and after that, encapsulating the packet and transferring a next-hop; and (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column5 lines 18-58; Column 8 lines5-62; Column12 lines1-65; Column13 lines 5-55; Column 14 lines 1-44; Column 21 lines 43-67, (Zheng disclosed Policing mechanism and lookup engine provide ip address and ip protocol sources destination where (DH) specify the destination address where ip lookup using tree structure determined for next hope. packet is outputted form communication);

b2) carrying the forwarding information out of the forwarding table by using the output address of the LPM matching table, according to the searching result for the LPM matching table, and after that, encapsulating the IP packet and transferring it to' the next-hop, and simultaneously reregistering the LPM matching result for the exact matching searching table (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column5 lines 18-58; Column 8 lines5-62; Column12 lines1-65; Column13 lines 5-55; Column 14 lines 1-44; Column 21 lines 43-67, Zheng disclosed Policing mechanism and lookup engine provide ip address and ip protocol sources destination where (DH) specify the destination address where Bits are combined with header ip lookup using tree structure determined for next hope. packet is outputted form communication);

In reference to claim 7, Zheng teaches a method a record medium capable of being read through a computer having writing a program, in an packet forwarding dispersion-processing apparatus having a processor, said record medium characterized that said program is provided to realize (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column 11 lines 10-25; Column 14 lines 3-20; Column 26 lines 45-67; Column30 lines 35-67, Zheng disclosed programmable Interconnection card & line card process and policing mechanism with transmit ASIC where Information written to buffer and read can be performed).

a) A first function classifying reception IP packets

According to a QOS and storing them at an input-side class queue (See abstract; figs 5,6,9,10; column 4 lines 1-67; column 5 lines 19-67; column 8 lines 30-64 column11 lines30-64, Zheng disclosed QOS classifying elements and transferred IP data packets is stored and queue output port);

b) A second function of searching forwarding information second function searching forwarding information base by using an exact matching table and an LPM (Longest Prefix Matching) search table according to an IP header value of the IP packet stored at input-side class queue, and gaining forwarding information (See figs 5,8,9,10,33-34; column 8 lines 4-48; column9 lines1-67; column10 lines 25-64; column 13 lines 13-64; column 14 lines 3-44; column 16 lines 6-49; column 17 lines 30-64; column18 lines 1-67,Zheng disclosed, policing component with logical mechanisms is to configured the data forwarding path where lookup array mechanism matching the ip route address in table with ip protocol and ip header gain the access in input data stream);

c) A third function of transferring the IP packet according to the gained forwarding information; Zheng disclosed Transmit (ASIC) forward IP data packet and Receiving (ASIC) gained the data information and forwarding through lookup Engine. (See figs 5,6,8-11,18, Column12 lines1-67; Column13 lines31-63; Column18 lines 5-55; Column 19 lines 22-54; Column 21 lines 43-67).

d) A fourth function of classifying the transferred packets according the QOS, and storing them at an output- side class queue; and (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column5 lines 18-58; Column 8 lines5-62; Column12 lines1-65; Column13 lines 5-55; Column 14 lines 1-44; Column 21 lines 43-67, Zheng disclosed classification element and QOS elements applied on transmitting ip packet and queue and stored on output port)

e) A fifth function outputting the packet stored at output-side class queue according to the QoS. (See figs 5,6,8,9,10,11,18, Column 4 lines1-60; Column5 lines 18-58; Column 8 lines5-62; Column12 lines1-65; Column13 lines 5-55; Column 14 lines 1-44; Column 21 lines 43-67 Zheng disclosed ip data packet outputting and QOS elements where IP data queue and stored on out port).

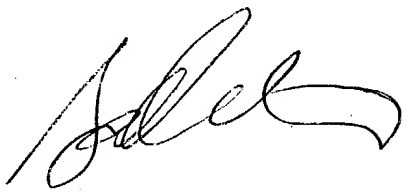
Claims 6 does not teach or define any new limitations above claims 1--5 and therefore is rejected for similar reasons.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farooque Ahmed whose telephone number is 703-605-4212. The examiner can normally be reached on M-F 8:30 to 5:00

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703) 308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Farooque Ahmed/Examiner
Art Unit 2157



SALEH NAJJAR
PRIMARY EXAMINER